



CHAPTER 4

AIRPORT DEVELOPMENT

4 Airport Development

An airport is divided into airfield and landside sections. The airfield is composed of runways, taxiways, apron areas, aircraft parking positions, air traffic control facilities, and navigational aids. The landside consists of the terminal building and the associated access roads. The ACE Plan primarily addresses airfield capacity. Although landside capacity remains an important aspect of the air transportation system, particularly given the heightened security initiatives underway, airport terminals are managed by the airport operators, and with the exception of its role in administering grants and other financing options, the FAA is not actively involved in landside capacity enhancement. The summary of airport construction contained in this chapter and Appendix D applies to the airfield.

The general principles that were established over half a century ago that guide the Federal Government's involvement and subsequent policies regarding airports remains relevant, in the context of the cyclical nature of the traffic and new economic challenges facing the infrastructure. Therefore, it is appropriate to review these principles, relative to the airport development activities described in Chapter 4.

4.1 The Guiding Principles:⁵

- Airports should be safe and efficient; located at optimum sites; and developed and maintained to appropriate standards.
- Airports should be affordable to both users and the Government, relying primarily on user fees and placing minimal burden on the general revenues of local, state, and Federal Government.
- Airports should be flexible and expandable, able to meet increased demand and to accommodate new aircraft types.
- Airports should be permanent, with assurances that they will remain open for aeronautical use over the long term.
- Airports should be compatible with surrounding communities, maintaining a balance between the needs of aviation and the requirements of residents in neighboring areas.
- The airport system should support national objectives for defense, emergency readiness, and postal delivery.
- The airport system should be extensive, providing as many people as possible with convenient access to air transportation, typically not more than 20 miles travel to the nearest National Plan of Integrated Airport Systems (NPIAS) airport.
- The airport system should help air transportation contribute to a productive national economy and international competitiveness.

⁵ National Plan of Integrated Airport Systems (NPIAS) 2001-2005.

4.2 Construction of New Runways, Extensions, and Taxiways

New runway construction remains the most effective capacity enhancement solution. However, often the most congested airports often do not have land that is easily accessible for the addition of runways, taxiways and landing aids. Changing departure and approach patterns frequently cause noise impacts that adversely affect noise-sensitive areas such as homes, hospitals, churches and schools. The FAA works closely with states, airlines, airports and neighboring communities to help craft alternatives that increase capacity while minimizing the number of people exposed to increased noise. The FAA has been working to streamline the process of assessing environmental impacts of proposed projects to help reduce the amount of time from the conception to construction of airport enhancements, without compromising the quality of the environmental review process.

4.3 Improvements in the Environmental Impact Statement (EIS) Program Continue

In 2002 the FAA continued its efforts to streamline the EIS preparation for projects that normally require extensive documentation (i.e., new airports, new runways, and major extensions). Figure 4.1 highlights the FAA's proposed initiatives for streamlining the EIS process for projects at the 31 Large, Hub, Primary Airports.

Figure 4-1 Proposed EIS Streamlining Initiatives ⁶

Streamlining Initiative	Benefit
For major runway projects at large, hub, primary airports, establish EIS Teams comprised of FAA, airport, and legal personnel experienced in EIS preparation.	The Office of Airports (ARP) has established EIS Teams for proposed projects at: San Francisco Int'l.; Washington-Dulles Int'l.; Philadelphia Int'l.; O'Hare Int'l. a proposed airport at Peotone, IL; New Orleans Int'l.; and Fort Lauderdale-Hollywood Int'l. The Teams are intended to reduce time consuming, major revisions to draft EISs by ensuring draft EISs adequately address an array of technical and legal issues. This accelerates FAA's preparation of the final EIS, thereby allowing ARP to more quickly decide the fate of capacity enhancing projects at these dominant airports.
Reallocate FAA staff to support environmental work.	ARP has converted 5 existing vacancies to environmental specialist positions. This has increased the number of people managing and preparing EISs.
Maximize consultant resources to assist FAA with routine tasks (e.g., initial administrative record assembly, writing draft letters, memos, or similar correspondence, researching issues).	Using consultants to complete specific administrative duties allows ARP environmental specialists to concentrate on preparing and managing EISs, instead of writing preliminary versions of various administrative memos and letters.
Streamline process and use more categorical exclusions.	FAA is expanding its categorical exclusion list. This will reduce the number of environmental documents ARP environmentalists must prepare. It will allow them to focus on EISs necessary for projects occurring at major hub airports typically having significant environmental impacts.
Write and issue Best Practices Information (BPI) on preparing and managing EIS.	The BPI discusses proven methods to facilitate EIS preparation and management and to meet project schedules.

Large, hub, primary airports are defined as those airports that enplane more than 1 percent of the total enplanements. Together, these airports enplane more than 70 percent of U.S. air passengers. The 31 Large Hub Primary Airports listed in Figure 4.2 are based upon the CY 2001 airport ranking by enplanements.

⁶ Report to Congress on Environmental Review of Airport Improvement Projects, U.S. DOT, May 2001.

Figure 4-2 The 31 Large, Hub, Primary Airports

1 Hartsfield Atlanta International (ATL)	17 Seattle-Tacoma International (SEA)
2 Chicago O'Hare International (ORD)	18 Boston Logan International (BOS)
3 Los Angeles International (LAX)	19 Philadelphia International (PHL)
4 Dallas-Fort Worth International (DFW)	20 Charlotte-Douglas International (CLT)
5 Phoenix Sky Harbor International (PHX)	21 New York La Guardia (LGA)
6 Denver International (DEN)	22 Baltimore-Washington International (BWI)
7 Las Vegas McCarran International (LAS)	23 Pittsburgh International (PIT)
8 San Francisco International (SFO)	24 Honolulu International (HNL)
9 George Bush International (IAH)	25 Salt Lake City International (SLC)
10 Minneapolis-St. Paul International (MSP)	26 Greater Cincinnati International (CVG)
11 Detroit Metropolitan Wayne County (DTW)	27 Washington Dulles International (IAD)
12 Newark Liberty International (EWR)	28 Fort Lauderdale-Hollywood International (FLL)
13 Miami International (MIA)	29 Tampa International (TPA)
14 New York John F. Kennedy International (JFK)	30 San Diego International Lindbergh Field (SAN)
15 Orlando International (MCO)	31 Chicago Midway (MDW)
16 Lambert St. Louis International (STL)	

A number of the busiest airports have completed new runways or other runway construction projects over the past 5 years. Figure 4-3 shows that 7 new runways were opened from January 1997 to October of 2002. Another 19 construction projects were completed for the same period, including 15 runway extensions, 1 renovation, 2 reconstructions and 1 realignment. There are 39 construction projects planned between November 2002 and 2007 shown in Figure 4-4, including the building of 13 new runways.

Figure 4-3 Completed Runway Construction Projects January 1997 to October 2002

Airport (ID)	New	Extension	Renovation	Reconstruction	Realignment	Year	Runway
Austin-Bergstrom International (AUS)			•			1997	17R/35L
Boise Air Terminal (BOI)		•				1997	10L/28R
Port Columbus International (CMH)		•				1997	10L
Grand Rapids Kent County International (GRR)		•				1997	18/36
Las Vegas McCarran International (LAS)				•		1997	1L/19R
Chicago Midway (MDW)				•		1997	4R/22L
Louisville International (SDF)	•					1997	17R/35R
Memphis International (MEM)	•					1997	18L/36R
Grand Rapids Kent County International (GRR)					•	1998	17/35
Little Rock Adams Field (LIT)		•				1998	4L/22R
Milwaukee General Mitchell International (MKE)		•				1998	7L/25R
Madison/Dane County Regional (MSN)	•					1998	3/21
Palm Springs Regional (PSP)		•				1998	31L/13R
Albuquerque International (ABQ)		•				1999	12/30

Figure 4-3 Continued

Airport (ID)	New	Extension	Renovation	Reconstruction	Realignment	Year	Runway
Austin-Bergstrom International (AUS)	•					1999	17L/35R
Greenville-Spartanburg (GSP)		•				1999	3L/21R
Philadelphia International (PHL)	•					1999	8/26
Memphis International (MEM)		•				2000	18C/36C
Phoenix Sky Harbor International (PHX)	•					2000	7/25
Palm Beach International (PBI)		•				2000	9L/27R
San Jose International (SJC)		•				2000	12L/30R
Des Moines International (DSM)		•				2001	5/23
Detroit Metropolitan Wayne County (DTW)	•					2001	4L/22R
El Paso International (ELP)		•				2001	4/22
Kahului (OGG)		•				2001	2/20
Phoenix Sky Harbor International (PHX)		•				2001	8L/26R

Figure 4-4 Runway Construction Projects November 2002 to December 2007

D – Deferred

Airport (ID)	New	Extension	Reconstruction	Runway Identifier	Estimated Cost (\$M)	Planned Operational Year	In Progress
Albany County (ALB)		•		10/28	TBD	2002	•
Birmingham (BHM)		•		5/23	TBD	2002	•
Dallas-Fort Worth International (DFW)		•		18L/36R	\$32.2	2002	•
George Bush Intercontinental (IAH)		•		15R/33L	TBD	2002	•
Dayton International (DAY)		•		6R/24L	TBD	2002	•
Pensacola Regional (PNS)		•		8/26	TBD	2002	•
Sarasota Bradenton (SRQ)		•		14/32	TBD	2002	•
Manchester (MHT)		•		6/24	TBD	TBD	
Cleveland Hopkins International (CLE)		•		6L/24R	\$458.0	2004	
Denver International (DEN)	•			16R/34L	\$167.0	2003	•
Dallas-Fort Worth International (DFW)		•		18R/36L	\$400.0	TBD	D
George Bush International (IAH)	•			8L/26R	\$260.0	2003	•
Orlando International (MCO)	•			17L/35R	\$203.0	2003	•
Miami International (MIA)	•			8/26	\$215.0	2003	•
San Jose International (SJC)		•	•	12R/30L	\$61.4	2003	
Hartsfield Atlanta International (ATL)	•			10/28	\$133.0	2006	
Charlotte-Douglas International (CLT)	•			18W/36W	\$187.0	TBD	D
Greensboro Piedmont Triad International (GSO)	•			5L/23R	\$96.0	2004	
Minneapolis-St. Paul International (MSP)		•		4/22	\$11.4	2004	
Minneapolis-St. Paul International (MSP)	•			17/35	\$563.0	2004	•

Figure 4-4 Continued

D – Deferred

Airport (ID)	New	Extension	Reconstruction	Runway Identifier	Estimated Cost (\$M)	Planned Operational Year	In Progress
Norfolk International (ORF)	•			5R/23L	\$100.0	2004	
Knoxville McGhee-Tyson (TYS)		•		5L/23R	\$7.0	2004	
Albany County (ALB)		•		1/19	\$7.5	2005	
Boston Logan International (BOS)	•			14/32	\$100.0	2006	
Greater Buffalo International (BUF)		•		14/32	\$4.9	2005	
Greater Cincinnati International (CVG)	•			17/35	\$233.0	2005	•
Greater Cincinnati International (CVG)		•		9/27	\$18.2	2005	
Dallas-Fort Worth International (DFW)		•		17C/35C	\$25.0	2005	
Fort Lauderdale-Hollywood International (FLL)		•		9R/27L	\$898.0	2005	
Lubbock International (LBB)		•		8/26	\$15.0	2005	
Manchester (MHT)		•	•	17/35	\$65.0	2005	
Cleveland Hopkins International (CLE)		•		5R/23L	\$40.0	2006	
San Antonio International (SAT)		•		3/21	\$20.0	2006	
San Antonio International (SAT)		•	•	12L/30R	\$11.0	2006	
Lambert St. Louis International (STL)	•			12R/30L	\$1,100.0	2006	
Washington Dulles International (IAD)	•			1W/19W	\$200.0	2007	

4.4 Resources Supporting Airport Development

Federal interest in the capital investment for airports is guided by the government's commitment to ensure safety and security, preserve and enhance system capacity, assist small commercial and general aviation airports, fund noise mitigation, and protect the environment.

Airport revenue comes from numerous sources—either directly or indirectly from revenue generated by the airlines, their passengers, and airport vendors, or through the taxes collected from aviation system users. Capital development funds are provided by the public and private sectors, including airport bonds, federal and state grants, passenger facility charges (PFCs), and airport-generated income.

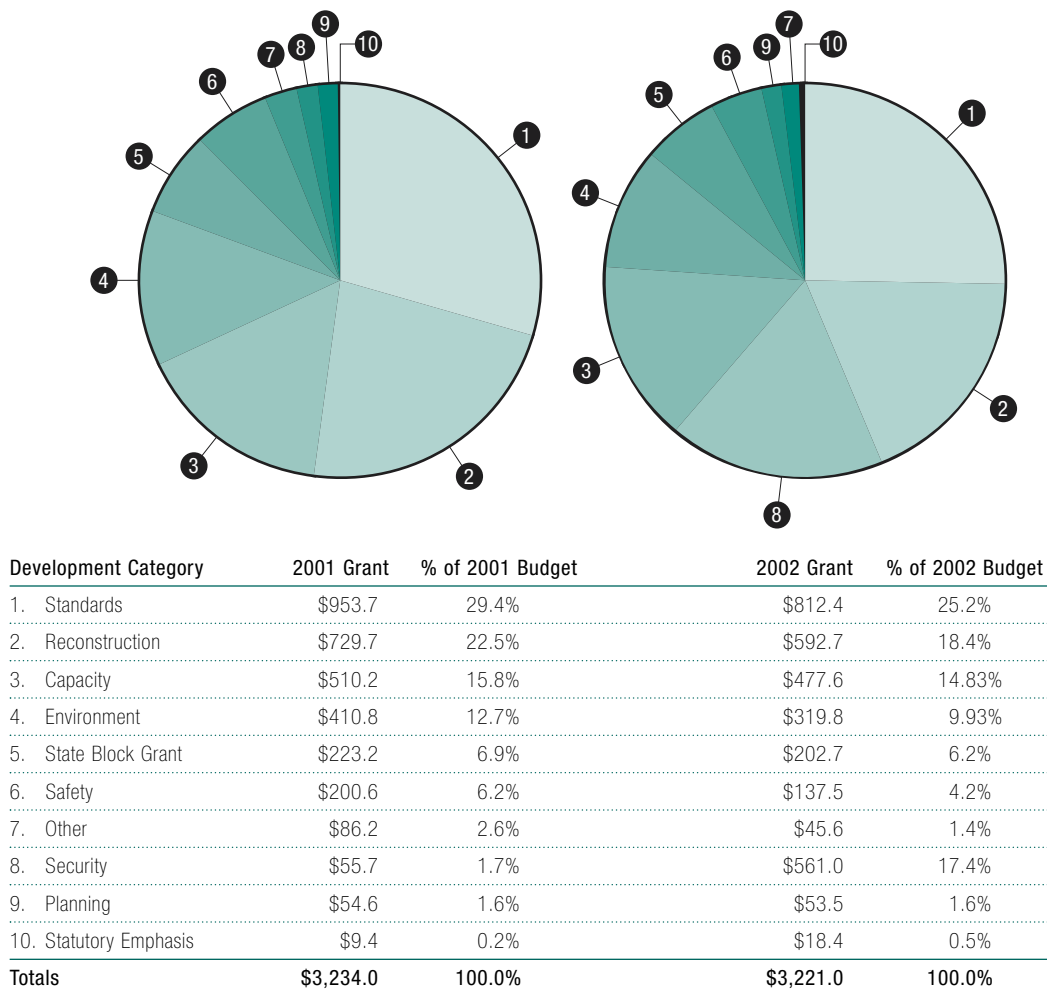
4.4.1 Airport Improvement Program

The FAA administers the Airport Improvement Program (AIP) and it remains a critical source of support for the nation's civilian air transportation infrastructure. The AIP federal grants are financed from taxes and fees collected from and dispensed to civilian airports from the Airport and Airway Trust Fund.

The fund was created by Congress more than 30 years ago to fund improvements to airports and to the air traffic control system. It also provides funding for FAA operating expense. Revenues in the trust fund come primarily from airline user fees and/or fuel taxes. The Airport and Airway Trust Fund finances the Airport Improvement Program (100% trust fund), the Facilities and Equipment Program (100% trust fund), the Research, Engineering and Development Program (100% trust fund), and the FAA Operations and Maintenance Programs (allocations vary, usually at 50% trust fund and the remainder from general funds).

The AIP program provides federal grants for the planning and development of eligible capital projects that support airport operations, including runways, taxiways, aprons, and noise abatement. Airport sponsors and non-federal contributors must provide the portion of the total project cost that is not funded with by AIP grants. In FY 2002, the FAA awarded \$3.3 billion in AIP grants, which included an allocation of \$561 million for security projects. This unprecedented increase in AIP grant funds awarded to airports for security projects in FY 2002 has affected the amount of funding available for some airport development projects, in comparison to FY 2001. In FY 2002, \$477 million was awarded to capacity projects, representing a decline of 40.3 percent from FY 2001. Figure 4.5 shows the distribution of AIP Grants (in millions) by Development Category, FY 2001 and 2002.⁷

Figure 4-5 Distribution of AIP Grants by Development



⁷ Federal Aviation Administration, Office of Airport Planning and Programming, APP-500.

Airports that qualify for AIP funding must fit one of the following categories:

- Publicly owned commercial service airports that enplane 2,500 or more passengers annually and have scheduled service
- Primary airports
- Cargo service airports, served by aircraft that only provide air transportation of property with an aggregate annual landing weight of more than 100 million pounds
- Relievers
- Remaining airports not specifically defined in the act, referred to as GA airports.

4.4.2 Passenger Facility Charges

Passenger Facility Charges (PFCs) are fees paid by the enplaning passengers, using airports that the FAA has authorized to collect these charges. The airlines collect PFCs as an add-on to airfare. The maximum PFC rate now is \$4.50 per trip segment, with a cap of \$18 for a roundtrip ticket. Since 1992, the FAA has approved over 300 airports to impose this fee, representing eventual collections of more than \$32.8 billion. PFCs are used to finance capital improvements to address safety, capacity, airport access, and security needs, as well as noise reduction projects. PFCs can also be used for the enhancement of competition between or among carriers, or the payment of interest on airport revenue bonds.

Every PFC is tied to a particular capital improvement project that has been approved by the FAA. Only 16 percent of this amount approved for collection is currently targeted for airside improvements. The majority of funds are earmarked for landside improvements—such as security and terminal projects; noise abatement—that involve land acquisition, soundproofing, monitoring and airport planning, and access improvements, such as roadways, rail, land and planning. As a result of the decline in air traffic in 2001, which is not expected to recover to pre-September 11 levels for at least another 2 years, this revenue source has been significantly reduced.

4.4.3 User Charges

Airport user charges include aircraft landing fees; apron, gate-use, or parking fees; fuel flowage fees; and terminal charges for rent or use of passenger hold rooms, ticket counters, baggage claim areas, administrative support, hangar space, and cargo buildings. Non-airport user charges include revenue from sources such as terminal concession rentals and fees, automobile parking, car rentals and interest income.

4.4.4 Bonds: Revenue and General Obligation

The issuance of bonds has been the primary means of financing airport development projects at commercial service airports. Most airport debt financing has used tax-exempt general airport revenue bonds (GARBS), which are secured by an airport's future revenue. Over the years, the use of general obligation bonds, which have a stronger credit standing because they are backed by government taxation power, has declined. This trend is attributed to the improved acceptance of GARBS.

Bond debt service is typically financed through airport user charges and PFCs. Historically, airport revenue has kept pace with increased debt-service costs, and so the ability to issue new debt has not been harmed. However, the decline in air traffic following September 11 has negatively impacted airport finances.

4.4.5 Other Sources of Funding

While most U.S. airports are self-sustaining, state and local governments contribute to the development of community airports, offering matching grants to secure federal support, providing direct grants to fund airport maintenance projects, and financing the installation of navigation aids. To expand air service and encourage competition, local and state municipalities, and the Federal Government have also supported airport and air service development marketing initiatives. Private sources of funding may also be available through airport tenants, third-party developers and private entities.

4.5 Other Airport Development Activities

There are other types of programs that currently enhance or have the potential to improve system capacity in the future. These programs provide facility and air service options that are consistent with Guiding Principles in the beginning of Chapter 4.

4.5.1 The Military Airport Program

The FAA chooses sites for this program, which is an AIP set-aside that provides a fixed percentage of the discretionary monies to fund the conversion of facilities that have converted or plan to convert from military to civilian or joint use. Another program benefit is the ability to use funds for projects not normally funded by AIP. Last year's AIR-21 law increased the total number of airports participating in MAP from 12 to 15. In July, the FAA selected five new sites including Guam International, in Agana, Guam, San Bernardino International, San Bernardino, California, Sawyer Airport, in Marquette Michigan, MidAmerica Airport, Belleville, Illinois, and Plattsburgh International in Plattsburgh, New York.

In addition to the five airports recently added to the program, other participating airports are: Pease International Tradeport, Portsmouth, New Hampshire; Cecil Field, Jacksonville, Florida; Okaloosa Regional Airport, Valparaiso, Florida; Tipton Airport, Odenton, Maryland; Southern California Logistics Airport, Victorville, California; Sacramento Mather Airport, Sacramento, California; March Inland Port, Riverside, California; Oscoda-Wurtsmith Airport, Oscoda, Michigan; Gray Army Airfield, Killeen, Texas; and Chippewa County International Airport, Kincheloe, Michigan.

4.5.2 Reliever Airports

The FAA has encouraged the development of high capacity general aviation airports in major metropolitan areas to provide general aviation with attractive alternatives to using congested airports. There are 334 of these specialized airports, called "reliever airports." In some cases, reliever airports have proven to be an effective element in a region's air transportation system.

This year, there have been very few developments at reliever airports, as major carriers significantly reduced capacity, and major airport congestion forcing alternative route solutions was not a prevailing problem. MidAmerica Airport, located in Mascoutah

Illinois, which is 24 miles east of St. Louis Lambert International, serves primarily as a reliever for Lambert's cargo traffic. MidAmerica, which is a joint-use facility with Scott Air Force Base, will use its MAP funds to build a cargo facility. With waning passenger loads, MidAmerica has not yet been able to generate its own passenger traffic. The reliever airport lost its sole commercial passenger carrier, Pan American Airlines in January 2002.

4.5.3 Essential Air Service to Small Communities Continues

This program was established when the Airline Deregulation Act (ADA) went into effect in 1978. Congress added a new section to the Federal Aviation Act to ensure that smaller communities would retain a link to the national air transportation system, with Federal subsidy where necessary. The Essential Air Service (EAS) Program subsidizes air travel to approximately 100 rural communities. In 2001, there was a decline of 19 percent in air service to smaller communities, with the majority of the decline coming from markets served by turboprops. This significant decline can primarily be attributed to a combination of the weakening economy and the events of September 11. In July of CY 2002, under provisions of AIR-21, the U.S. Department of Transportation (DOT) granted 40 small communities \$20 million under a pilot program to address local air service problems. These funds will help resolve issues such as high fares and insufficient levels of service. Under this program, the communities will match awards by nearly 75 percent.